

HEWI reading module IP 21 ES5401

Product description / scope

The HEWI reading module IP 21 ES5401 in combination with the wallreader-basis-unit ES5403 or the compact-wallreader ES5400 is defined for usage within the electronic locking system ES5000 to control peripheral devices like electric door openers, electric locks, electric door and gate drives, elevators and so on.

The usage for scopes apart from the usual requests for electronic locking systems has to be authorized by HEWI in the doubt. The reading-module ES5401 must not be used in humid rooms or outside of buildings. Please use the variations ES5402 and ES5403 for those applications. For further informations contact the HEWI Servicecenter locking systems, fon +49 5691 82-200. The usage in dusty environment without further protections (for instance the moutage in dust protected casings) is not allowed.

Warning

a) Security against manipulation (unauthorized access)

Attention: If using the ES5401 manipulation in access-direction is possible, if the combined wallreader-basis-unit ES5403 or the compact-wallreader ES5400 isn't located in the secured inside area. That means that by removing the wallreader the connection cables can be used for operating the peripheral device. For security-relevant applications the reading-module has to be seperated from the basis-unit.

b) Environmental requirements

Combined with the HEWI covers, the protection-class corresponds to IP21, therefore the ES5400 has to be used inside of buildings an in dry rooms. For the usage in humid rooms or in dusty environment, specially designed products are offered.

c) Combination with peripheral devices

For the operation with peripheral devices the operating instructions, technical specifications of the devices have to be observed.

d) Installation / maintenance

Installation and maintencae musted be executed without power supply – danger of injury or damage of the product or devices.

e) Sensitivity against contact (e.g. ESD)

Never touch electronical components or circuits of the circuit board, otherwise you could damage the wallreader irreparable.

f) Combination with electrical door openers / special time zones

If a special time zone should be used, which operates an electrical door opener for a longer time-period (> 20 s, e.g. opening from 9 to 12 am), you must use a door opener which could endure permanent power.

g) Non-operating at blackout

During a blackout (no power-supply) the wallreader is non-operational. The wallreader has an included battery-buffer, which guarantees the perservation of the stored data (programming, internal clock) Nonetheless plase check the internal time after a longer blackout. If a special time zone or a manual activated toggle-function was in work during the blackout, it will be automatically deactivated for security reasons, even if it should be active in the moment after the blackout. For example: A special time zone has been programmed between 2 an 4 om. During this time the relay is activated, a peripheral electrical door opener

is active, the door can be used by everyone without valid access-rights. At 3 pm a blackout occurs, at half past 3 the power supply returns. The relay isn't activated any more, the door can only be opened by people with valid access-rights.

h) Danger of lock-out or lock-in during installation

Ensure, that during the installation of a wallreader combined with a door-lock, the door can always be opened manually, even if the wallreader or the door-lock is not working (e.g. because of incorrect installation). Always make complete function-test after installation.

i) Interferences

Strong electro-magnetic fields (e.g. transformers, tomographs, ...) and transmitters (IT-networks, telecommunications, ...) near the wallreader can cause malfunction or interferences!

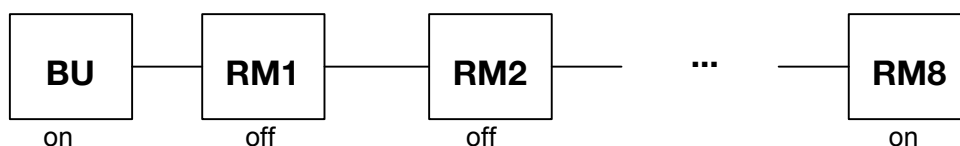
j) Connecting multiple reading-modules with a basis-unit / a compact-wallreader

Up to 8 reading-modules ES5401 / ES5402 / ES5404 can be connected to a basis-unit ES5403. Up to 7 reading-modules ES5401 / ES5402 / ES5404 can be connected to a compact-wallreader ES5400. A unique address of the reading-modules is important (address-switch). Each address (1..9) must be used once per basis-unit / compact-wallreader (see figure 5).

The data connection uses a RS485-Bus, that means, the connection-cable is wired from the basis-unit / compact-wallreader to the first reading-module and from there to the second reading-module and so on. Umbrella wiring is not possible!

k) Termination-resistant with multiple reading-modules

Particularly at long connection-distances, the RS-485-bus-connection has to be terminated. Therefore the On-Off-switch on the reading-modules can be used. At the finish of the bus, the bus has to be terminated by switching on the resistant (Position On). Every other reading-modules within the bus-connection need the switch-position Off (see figure 5). Exemption: The reading-module of a compact-wallreader can always be terminated, the switch-position On hasn't to be changed.



BU ... basis-unit (or compact-wallreader)
 RM1-RM8 ... reading-module 1 to reading-module 8

Variations

The reading-module ES5401 can be combined either with basis-unit ES5403 or a compact-wallreader ES5400. Different cover-types are available, for instance the sub-finery cover plate ES5410 or the HEWI DIN Cover ES5450 for combination with standard switches of Berker, Busch-Jaeger, Gira, Jung, Merten (mechanical compatibility to external products has to be proven).

Alternatives

Alternative to the reading-module ES5401 the reading-module ES5402 or the reading-module (Siedle) ES5404 can be used.

Preparation of installation

Please check before the installation, if the wallreader you tend to install is suitable for your application! Check especially:

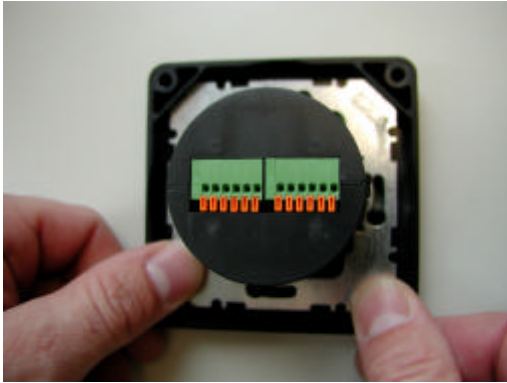
- Electrical data (voltage, current, power) of the wallreader and the peripheral devices.
- Suitability of the wallreader for the environment, especially the protection class IP21.
- The request at security of the system. In doubt always use an additional reader-module which will be installed on the „unsecure“ side, in combination with a basis-unit ES5403 or the compact-wallreader ES5400, installed on the „secure“ side.
- Please notice, that the security of the whole system always depends on the quality of peripheral devices such as doors, self-locking-locks, burglar-protected products, or an alarm-device. In addition the installation has always to consider the supposed attacking-direction.
- Please let security-relevant installations be implemented by suitable specialists.

Required Tools

For the installation a screwdriver (PH2) or a suitable screwdriver for mounting other screws is needed. To strip the connection cables a cable stripper or a side cutter is needed.

Attention: After the installation the relays are active. Therefore a door opener could be active. According to the application, a door could be unlocked and used by everyone. If this is not wished, please programm the wallreader instantaneously using the HEWIKey5 Administration-software, the programming device and the programming key / card. In doubt please contact the HEWI Servicecenter locking systems, fon +49 5691 82-200. Ensure, that during the installation of a wallreader combined with a door-lock, the door-lock, the door can always be opened manually, even if the wallreader or the door-lock is not working (e.g. because of incorrect installation). Always make a complete function-test after installation.

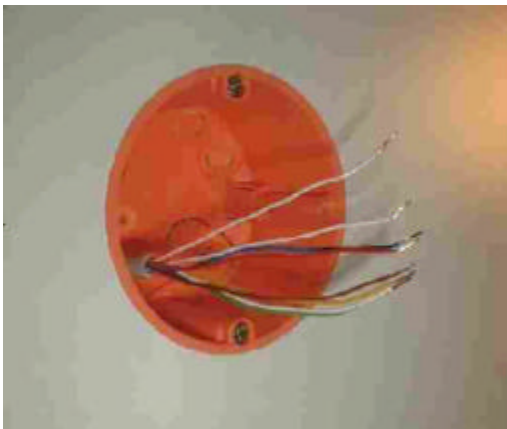
Description of standard-installation



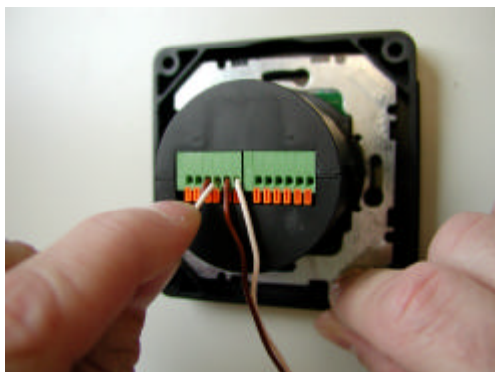
1. Lock the reading-module ES5401 in backside of the cover ES5410.
Attention!
The LED should be in the upper left corner (then the HEWI-Logo is readable).



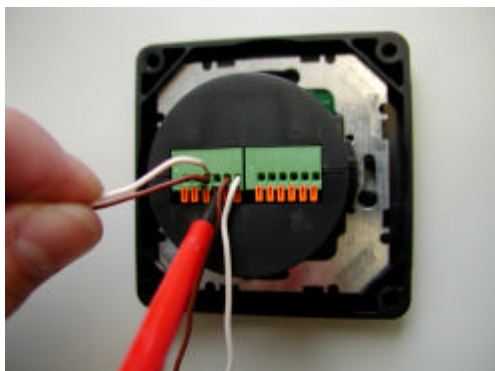
2. Position of LED in the upper left corner.
Assemblydrills horizontal or vertically,
matching to the concealed socket.



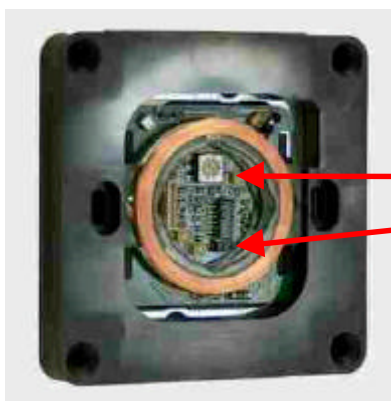
3. The sub-finery-socket (depth min. 40 mm) should be mounted smooth to the wall.



4. Install all necessary connections (power supply, relay, etc.) as shown in the wiring plan beyond. Plug the still connection cables into the right connector. They fit automatically.



4a. De-Installation:
Move the lever with a small screwdriver (or smthg. similar) and remove the cable.



5. Mount the wallreader onto the socket using the enclosed screws. Turn the screws carefully so that the circuit board doesn't become distorted. Alternative use four screws in the edges. Check the address switch and the termination switch (on/off).



6. Plug the cover onto the wallreader. The LED should be visible.

After switching on the power-supply, a beep sounds. The red and green LED blink in change every second. Simultaneously the relays are activated. This is because to ensure the door opening with non-personalised wall-readers.

For further steps (esp. programming) see the manual of the HEWIKey 5 Administration software.

Installation in metallic casings / surfaces:

The installation in metallic casings or surfaces is possible if:

- Opening with a diameter of min. 70 mm
- Installation of the wallreader with the installation-plate outside the metallic casing/surface.
- Grounding of the metal-casing.

Description of known problems during installation including correctional action

Connection cables are too thick and cannot be fitted into the connection-bar:

Please use luster terminals and a short linkup of the cable-type specified in the data-sheet beyond.

Control of function

Please always check the complete function of the installation.

Maintenance

Basically the ES5401 doesn't need maintenance. However, we recommend to check the actuality of the internal time regularly. At least make the checks during the time switches (summer- wintertime).

We further recommend a regulary check of the correct function of the wallreader, especially in security-relevant areas. Security relevant can be every area, which will be affected by a possible malfunction or wrong programming. This means especially alarm-systems, which are operated by the wallreader or locks in escape- or outside-doors.

Please control the event-protocolls, which can be evaluated using the programming-device and the HEWIKey Software. Coceivably you'll find indications of a wrong-programming of the locking system, which can be critical (e.g. an active toggle-function, which wasn't planned or an occured access from a person without access-rights to given time). In that case, please check the correct programming of the wallreader first (especially time, holidays, special time zones) and the ident-media (especially access-rights to given time, groups and validity). In doubt, contact the HEWI Servicecenter locking systems, fon +49 5691 82 – 200.

Care

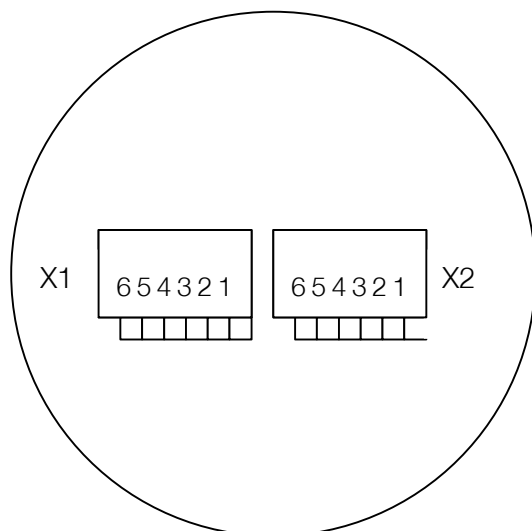
HEWI products are easy-care. Generally speaking, an occasional wipe with a damp cloth is enough, however, you fell you have to use detergents, you should take note of the following information: Only use detergents with ph-rating of between 6 and 8. Detergents containing active substances such as phospates, soap and tensides may be used. Detergents containing acids, alkalis, bleach or scouring agents may not be used. Nor should utensils with a scouring effect such as brushes etc. be used. Usage of any detergent requires full compliance with the manufacturer's instructions (concentration, soaking time etc.).

If this is not done, the surface finishes of the HEWI products may suffer as a result and sustain damage. HEWI accepts no liability whatsoever for damage occurring from incorrect handling.

For further information please contact HEWI Servicecenter locking systems, fon +49 5691 82-200.

Data sheet

General	
Product description	Reading module IP 21 ES5401
Casing	
Length x width x height	70 x 70 x 44 mm
Casing-Material	Synthetic
Available colours	- (see data sheets of the covers / casings)
Installation depth	Min. 40 mm
Installation diameter	Min. 50 mm
Power supply/ connections	
Current	Power supply via basis unit / compact-wallreader
Current consumption	max. 150 mA
Connection cable max. distance (cable length)	I-Y(ST)Y 2 x 2 x 0,8 100 m
Specific data	
Operating temperature	-20 bis +70 °C
Storage temperature	-40 bis +85 °C
Humidity	Max. 95% not condensing
Data interfaces	RS485 for communication with basis-unit or other reading-modules.
Reading distance	Depending on casing and temperature - card (ES5931 / ES5932): ca. 80 mm - key-ring (ES5920): ca. 50 mm - key (ES5950): ca. 25 mm All details at room temperature.
Communication with programming device	Inductive coupling.
Connection configuration	See figure
Tests	
CE-test	Basic technical standard EN 5002 1081

Wiring plan:

Ansicht von hinten

socket X1 / X2:

1:	Power supply (basis-unit)	(check polarity!)
2:	RS485 A	(check polarity!)
3:	RS485 B	(check polarity!)
4:	GND (power supply)	(check polarity!)
5:	not used	
6:	not used	

Sockets X1 and X2 can be used arbitrary. X1 can be used as Input (from basis-unit) and x2 as output to other reading-modules.

Connection basis unit ES5403 <--> reading module ES5401:

	Basis unit ES5403	Reading module ES5401
RS485-A	J3.2	2 (socket X1 or X2)
RS485-B	J3.3	3 (socket X1 or X2)
VCC	J3.1	1 (socket X1 or X2)
GND	J3.4	4 (socket X1 or X2)

Attention: Please notice the polarity of the connections, as shown in the chart.